DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON, DC

MEMORANDUM FOR SEE DISTRIBUTION 19 DEC 2001

FROM: HQ USAF/ILE
1260 Air Force Pentagon
Washington, DC 20330-1260

SUBJECT: Sustainable Development Policy

It is Air Force policy to apply sustainable development concepts in the planning, design, construction, environmental management, operation, maintenance and disposal of facilities and infrastructure projects, consistent with budget and mission requirements. A sustainable facility achieves optimum resource efficiency and constructability while minimizing adverse impacts to the built and natural environments through all phases of its life cycle. The goals of sustainable development are to conserve energy, water, and raw materials; prevent environmental degradation caused by construction, operations, and disposal of facilities; and create built environments which are livable, healthy, maintainable, and productive. Refer to Attachment 1 for more information on sustainable development.

Sustainable development requires integrated programming and project planning that can best be accomplished by a multidisciplinary team of planners, designers, end users, construction and maintenance specialists, and environmental specialists. Comprehensive planning should take into account those principles promoted in the Office of the Secretary of Defense (OSD) Sustainable Planning Guide referenced in Attachment 2. Setting sustainable development goals early in the planning, programming and budgeting process and ensuring these goals are attained during design and construction is critical to project success. Selection of knowledgeable and experienced consultants is another key to success. According to the Federal Acquisition Regulation (FAR), consultants for planning, environmental, design and related professional services shall be selected partially on the basis of their "specialized experience and technical competence in the type of work required, including, where appropriate, experience in energy conservation, pollution prevention, waste reduction, and the use of recovered materials." This selection criterion shall be given importance when used jointly with the other criteria specified in the FAR.

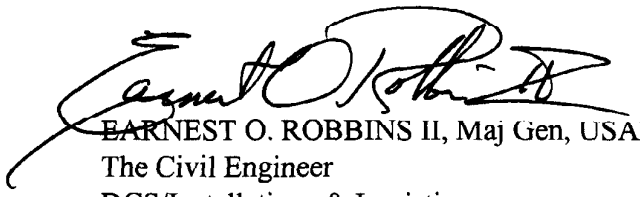
The United States Green Building Council's (USGBC) "Leadership in Energy and Environmental Design (LEED™)" Green Building Rating System is the Air Force preferred self-assessment metric. It may also be used as a tool to help apply the principles of sustainable development. LEED™ is a self-assessment system designed for rating new and existing commercial, institutional, and high-rise residential buildings. The system awards points based on the number of LEED™ credits earned. These credits are earned by using products, systems, strategies, or technologies described in LEED™. The LEED™ credits are opportunities, not

requirements. Where actions or criteria identified in LEED™ are not applicable to a specific project, are not cost effective, or are not in compliance with current Air Force criteria, LEED™ allows use of alternative features or practices. LEED™ is in use nationwide and is already familiar to many architectural-engineer and construction firms employed by the Air Force.

Each MAJCOM should review their future projects beginning with the FY04 MILCON program (including non-privatized housing), and incorporate sustainable development using LEED™ criteria. At least twenty percent of each MAJCOM's projects should be selected as LEED™ pilot projects in FY04, with increasing percentages of projects qualifying for a certification in subsequent years. The Air Force Sustainable Facilities Guide will provide tools and suggested guidelines for selecting candidate projects. The goal is to have all MILCON projects in the FY09 program capable of achieving LEED™ certification. Submission to the USGBC for actual LEED™ certification is at MAJCOM discretion. Unspecified Minor Construction (P-341) and housing privatization projects should also be considered when implementing sustainable development. This policy does not apply to Host Nation or NATO funded projects.

Sustainable development concepts will benefit the Air Force by creating high-performance buildings with long-term value. They are to be integrated into the development process and balanced with all other design criteria to achieve best value for the Air Force. The economic analysis process need not change, but the elements to consider will now include sustainable technologies and their potential for long-term savings.

HQ AFCEE and HQ AFCESA provide guidance documents and technical support to help you execute this sustainable development policy. AFCEE's expertise includes planning, the facility delivery process, and environmental management. AFCESA provides expertise for design criteria, construction standards, life cycle and sustainable costs, energy and water conservation, and operations and maintenance issues. This policy will be incorporated in the next revision of AFI 32-1023, Design and Construction Standards and Execution of Facility Construction Projects. Additional information regarding Air Force specific references/guidance is included at Attachment 2. If the members of your staff have any questions, please have them contact your respective POC at HQ AFCEE or HQ AFCESA/CES.



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Attachments
1. Defining and Describing Sustainable Development
2. References for Incorporating Sustainable Development Concepts into Air Force Projects

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Attachment 1

Defining and Describing Sustainable Development

Sustainable development is an investment in the future. Through conservation, improved maintainability, recycling, reuse, reduction and other actions and innovations, we can meet today's needs without compromising the ability of future generations to meet their own. Sustainable development supports an increased commitment to environmental stewardship and conservation, and results in an optimal balance of cost, environmental, societal and human benefits while meeting the mission and function of the intended facility or infrastructure.

Sustainable development produces facilities and infrastructure that meet mission requirements in a cost-effective manner while minimizing resource loss and damage to the environment. Conscientious site planning and use of renewable or recycled resources will minimize environmental impacts and resource loss during construction. Designers can minimize operational impacts by selecting materials and systems that reduce the demand for energy and water, allow renewable energy use, and avoid maintenance practices that require the use of undesirable raw materials or chemicals. Sustainable development optimizes each project's total economic and environmental impacts and performance throughout its life cycle.

Sustainable development is achieved through a process of minimizing each project's adverse economic and environmental impacts and optimizing performance throughout its life cycle. It requires changes to the facility delivery process to ensure the "best fit" of the built environment to the natural environment. These changes include:

- Setting sustainable development goals early in project planning, and following through during design and construction to ensure their achievement;
- Including planners, programmers, and environmental managers as active participants in the project management team;
- Selecting architectural-engineer firms with knowledge and experience in sustainable design;
- Educating the construction contractor about the sustainable development goals of the project.

Sustainable development in the built environment includes six fundamental principles:

(1) Optimize Site Potential. Creating sustainable buildings starts with proper site selection, including consideration of the reuse or rehabilitation of existing buildings. The location, orientation, and landscaping of a building affect the local ecosystems, transportation methods, and energy use.

(2) Minimize Energy Consumption. A building should rely on optimizing system efficiencies and employing conservation measures. Renewable energy technologies should be used in facility projects whenever feasible and cost effective. New facilities should meet or exceed current Air Force energy performance goals.

(3) Protect and Conserve Water. Fresh water is an increasingly scarce resource near many of our bases. A sustainable building should reduce, control or treat site runoff, use water efficiently, and implement as many Federal Energy Management Program Water Efficiency Improvement Best Management Practices as practicable.

(4) Use Environmentally Preferable Products. Buildings should be constructed of materials that minimize lifecycle environmental impacts such as global warming, resource depletion, and toxicity. In a materials context, life cycle includes raw materials acquisition, product manufacturing, packaging, transportation, installation, use, and ultimate disposal.

(5) Enhance Indoor Environmental Quality (IEQ). The IEQ of a building has a significant impact on occupant health, comfort, and productivity. Among other attributes, a building should optimize daylighting, be well ventilated, control moisture, and avoid the use of materials with high-VOC emissions.

(6) Optimize Operational and Maintenance Practices. Buildings should be designed to take into account the energy and environmental impacts of operating and maintaining the building. Designers are encouraged to specify materials and systems that reduce maintenance requirements, and/or require less water, energy, and toxic chemicals to maintain.

The Construction Criteria Base (CCB) has for many years been the official DoD distribution system for all facilities-related criteria. CCB is currently being expanded into a new system called the Whole Building Design Guide (WBDG) that will offer far greater capability as a design tool. The WBDG will be the primary portal for sustainable development information and methodologies. It can be accessed at http://www.wbdg.org/index.htm.

Attachment 2

References for Incorporating Sustainable Development Concepts into Air Force Projects

Planning

The *Feasibility Study for Implementing Sustainable Development Concepts and Principles into the Army, Navy, Air Force, and Marine Corps Land and Facilities Planning Processes and Programs* or **Sustainable Planning: A Multi-Service Assessment 1999**, was sponsored by the Office of the Secretary of Defense and is the first Department-wide attempt by the DOD to address sustainability and sustainable planning at a policy level. The purpose of the study was to establish a common understanding of sustainable development principles, and to use that understanding to assess opportunities to include sustainability in military planning. A key aspect of the report is the joint DOD approach in seeking practical applications of sustainability within the unique culture of the military. Other governmental guidance is provided through the US HUD and USEPA's "Smart Growth" program and planning guidance. Additionally, the American Planning Association has published a guide for sustainable planning.

- OSD Sustainable Planning: A Multi-Service Assessment 1999
  http://www.denix.osd.mil/denix/DOD/Library/Sustain/assessment99.pdf

- Smart Growth Network: http://www.smartgrowth.org/index2.html

- American Planning Association, Policy Guide on Planning for Sustainability:
  http://www.planning.org/govt/sustdvpg.htm

Design

- The Whole Building Design Guide (WBDG) is an Internet resource providing a portal to a wide range of building-related design guidance, criteria and technology. It is intended for use by federal, military and private sector architects, engineers, and project managers.

- The United States Green Building Council (USGBC) has created the "Leadership in Energy and Environmental Design (LEED™)" Rating System. It may be used as a guide to apply the principles of sustainable development. The LEED™" Rating System may also be utilized simply as a voluntary self-assessment tool for measuring a project's achievements in sustainable development without submitting for a certified rating. Points are awarded for achievements in five areas. Sustainable Sites; Water Efficiency; Energy and Atmosphere; Materials and Resources; and Indoor Environmental Quality. Some parts or sections may not be appropriate for AF use. One specific part under the Energy and Atmosphere section, *Optimize Energy Performance,* is not recommended for Air Force use. This part should not be used because it uses energy **cost** budget as the method for developing the performance of a building. The preferred Air Force method is to use the energy **use** budget to design facilities based on BTU/SF/YR.

AFCEE's Sustainable Development web page provides single point access to Air Force guidance and a variety of supporting information. AFCESA's web pages provide similar single point access for Air Force Energy and Water Management guidance and a variety of supporting information

- Whole Building Design Guide: http://www.wbdg.org/index.htm
- United States Green Building Council (USGBC) LEED™ Green Building Rating System: http://www.usgbc.org/
- PRO-ACT Fact Sheet on Sustainable Development: http://www.afcee.brooks.af.mil/pro_act/fact/Aug98a.htm
- Air Force *Environmentally Responsible Facilities Guide* and *Sustainable Development Toolbox* (to be replaced by the "AF Sustainable Facilities Guide" in FY02): http://www.afcee.brooks.af.mil/green/greenhome.asp
- Air Force *Guide to Green Purchasing*: http://www.afcee.brooks.af.mil/EQ/ap/gg/default.asp
- Air Force *Construction and Demolition Waste Management Guide*: http://www.afcee.brooks.af.mil/green/resources/resources.asp
- Energy policy and guidance: http://www.afcesa.af.mil/Directorate/CES/Mechanical/Energy/default.htm
- Federal Energy Management Program (FEMP), Technical Assistance: http://www.eren.doe.gov/femp/techassist.html
- Water Efficiency policy and guidance and Improvement BMPs http://www.afcesa.af.mil/Directorate/CES/Civil/Water/Water.htm.

Environmental Management

There is a wide range of source material addressing natural resources, pollution prevention and environmental quality. Both governmental and non-governmental sources are of value. The US Department of Energy has played a significant role in this field through its Federal Energy Management Program and the DOE Center of Excellence for Sustainable Development. Many more government and nonprofit conservation organizations are concerned about waste and environmental abuse of the nation's natural resources. Links to many of these sites are included on the sites listed below.

- The Sustainable Communities Network, a clearinghouse for a wide range of sustainable concepts and applications: http://www.sustainable.org/

- DOE Center of Excellence for Sustainable Development: http://www.sustainable.doe.gov/

- Federal Energy Management Program (FEMP), Technical Assistance: http://www.eren.doe.gov/femp/techassist.html

- FEMP Water Efficiency Improvement BMPs are also available on the AFCESA website at http://www.afcesa.af.mil/Directorate/CES/Civil/Water/Water.htm